

Central Valley Regional Water Quality Control Board

31 July 2017

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APPROVAL OF THE COMPREHENSIVE GROUNDWATER QUALITY MANAGEMENT PLAN - EAST SAN JOAQUIN WATER QUALITY COALITION

Thank you for your 12 June 2017 submittal of the East San Joaquin Water Quality Coalition Comprehensive Groundwater Quality Management Plan (GQMP). The GQMP was reviewed to determine compliance with Waste Discharge Requirements General Order R5-2012-0016-R3 (Order) and Appendix MRP-1 of Attachment B (Monitoring and Reporting Program) to the Order. Based on the information in the submitted documents and the attached staff review, the 12 June 2017 submittal of the GQMP meets the terms and conditions of the Order. Your GQMP is approved.

Thank you again for your submittal. If you have any questions regarding this letter, please contact Dana Kulesza at 916-464-4847 or Dana.Kulesza@waterboards.ca.gov.

Sincerely,

Original signed by
Pamela C. Creedon
Executive Officer

Enclosure: Staff Review of the GQMP

Central Valley Regional Water Quality Control Board

TO: Susan Fregien
Senior Environmental Scientist
Irrigated Lands Regulatory Program

FROM: Dana Kulesza
Engineering Geologist
Irrigated Lands Regulatory Program

DATE: 24 July 2017

SUBJECT: REVIEW OF THE EASTERN SAN JOAQUIN RIVER WATERSHED
COMPREHENSIVE GROUNDWATER QUALITY MANAGEMENT PLAN

On 12 June 2017, the Central Valley Water Board received a revised Eastern San Joaquin River Watershed Comprehensive Groundwater Quality Management Plan (GQMP). The GQMP has been reviewed to determine compliance with requirements pursuant to section VIII.H of Waste Discharge Requirements General Order R5-2012-0116-R3 (Order) and Appendix MRP-1 of Attachment B (Monitoring and Reporting Program) to the Order. This revision meets the terms and conditions of the Order and is recommended for approval by the Executive Officer.

Five prior versions of the GQMP have been reviewed by staff. After a 30-day public comment period, formal comments were provided to the East San Joaquin Water Quality Coalition (Coalition) on 17 June 2016 that identified deficiencies within the 23 February 2015 draft. A revised GQMP was submitted on 29 July 2016. Staff and the Coalition worked informally to address remaining issues over three more versions and staff feedback. The 30 May 2017 revision addressed most of the staff comments, and the 12 June version addressed all comments.

Table 1 lists the Order's requirements for the GQMP and identifies where in the document they have been met. A summary of the Coalition's GQMP approach is provided below, as well as a staff recommendation to approve the Comprehensive GQMP.

Summary of GQMP Approach:

The Coalition's GQMP intends to ensure that management practices are implemented by growers to address nitrate in groundwater. Specific short-term management practices (e.g., well head protection measures) are identified for implementation in the GQMP. In addition, management practices identified as part of the Management Practices Evaluation Program (MPEP) will be implemented by applicable growers as they are identified. Table 10 in the GQMP provides the performance goals for the GQMP. They are:

- 1) Review Farm Evaluations to track the number/type of existing management practices;
- 2) Properly destroy abandoned wells and implement wellhead protection measures;
- 3) Develop a list of "4R's" management practices and distribute to members;
- 4) Implement management practices; and
- 5) Evaluate the effectiveness of new management practices.

The GQMP approach includes three primary actions to achieve these goals. They are:

- 1) Education of members;
- 2) Implementation of management practices; and
- 3) Tracking and effectiveness evaluation of management practices.

Education of members includes grower outreach meetings, materials on recommended management practices, and individual outreach to outliers identified during the Coalition's review of each grower's Nitrogen Management Plan Summary Report (NMP Summary Report).

Implementation of management practices includes implementation, by growers, of specific short-term (e.g., well head protection measures) and long-term protective practices that will be identified through the "4 R's" and MPEP processes. The implementation of practices will occur based on the schedule and milestones identified in GQMP Table 10. MPEP-identified practices will be implemented by all growers whose parcels include the crop type and/or site conditions for which the practice has been proven protective of groundwater quality. Additional practices may also be implemented by growers as appropriate for their operations.

Tracking and effectiveness evaluation of management practices includes tracking of nitrogen management methods and evaluating changes in practices through grower responses submitted in the Farm Evaluation surveys and Nitrogen Management Plan Summary Reports. The Coalition will evaluate whether growers identified as verified nitrogen use outliers are reducing their 3-year running average A/Y or A/R values.

Groundwater monitoring will be accomplished through the implementation of the groundwater quality trend monitoring program. Results from this program will be evaluated to determine if additional monitoring is needed to meet GQMP objectives. Groundwater Water Quality Assessment Report (GAR) updates will also assemble and evaluate additional groundwater data.

Staff Recommendation:

Staff finds that the 12 June 2017 GQMP submittal meets the requirements outlined in the Order and recommends the GQMP for approval by the Executive Officer. The GQMP contains the necessary components and supporting information to enable the Coalition and growers to meet the goals and objectives of the Order.

Table 1. Components of the Groundwater Quality Management Plan

Item No.	Required Component	Location in GQMP
Introduction and Background		
1	Provide a discussion of the constituents of concern (COCs) that are the subject of the GQMP.	p. 31
2	Provide a discussion of the water quality objective(s) or trigger(s) requiring preparation of the management plan.	p. 31
3	Identification (both narrative and in a map form) of the boundaries (geographic and groundwater basin[s] or portion of a basin) to be covered by the GQMP including how the boundaries were delineated.	p.25
4	Provide a summary of previous work conducted to identify the occurrence of the COCs (e.g., studies, monitoring conducted) for the GQMP area.	p. 32
Physical Setting and Information		
5	Provide land use maps which identify the crops being grown in the GQMP area. Map(s) must also be provided in electronic format as ArcGIS shapefiles.	p. 120
6	Provide soil types and other relevant soils data as described by the NRCS soil survey or other applicable studies. The soil unit descriptions and a map of their aerial extent within the study area must be included.	p. 86; GAR
7	Identification of the potential irrigated agricultural sources of the COC(s) for which the management plan is being developed. If the potential sources are not known, a source identification study may be designed and implemented.	p. 31
8	Provide a list of the designated beneficial uses as identified in the <i>Water Quality Control Plan for the Tulare Lake Basin</i> , Second Edition, revised January 2004 (Basin Plan).	p. 49
9	Provide a baseline inventory of identified existing management practices in use within the management plan area that could be affecting the concentrations of COCs in groundwater and locations of the various practices.	p. 52
10	Provide a summary, discussion, and compilation of available groundwater quality data for the parameters addressed by the management plan. The GAR developed for the Coalition's area, and groundwater quality data compiled in that document, may serve as a reference for these data.	p. 31
Geology and Hydrogeology		
11	Provide regional and area specific geology, including stratigraphy and existing published geologic cross-sections.	p. 82
12	Provide information on groundwater basin(s) and sub-basins contained within the GQMP area, including a discussion of their general water chemistry as known from existing publications, including the GAR (range of EC, concentrations of major cations and anions, nutrients, TDS, pH, dissolved oxygen, and hardness). The discussion should reference and provide figures of existing Piper Diagrams, Stiff Diagrams and/or Durov Diagrams for the GQMP area.	p.19

13	Provide information regarding known water bearing zones, areas of shallow and/or perched groundwater, as well as areas of discharge and recharge to the basin/sub-basin in the GQMP area (rivers, unlined canals, lakes, and recharge or percolation basins).	p. 86
14	Identification of which water bearing zones within the GQMP area are being utilized for domestic, irrigation, and municipal water production.	p. 86
15	Aquifer characteristics such as depth to groundwater, groundwater flow direction, hydraulic gradient, and hydraulic conductivity, as known or estimated based on existing information.	p. 100
16	Identification, where possible, of irrigation water sources (surface water origin and/or groundwater) and their available general water chemistry (range of EC, concentrations of major cations and anions, nutrients, TDS, pH, dissolved oxygen, and hardness).	p. 112
Management Plan Strategy		
17	Provide a description of the approach to be utilized by the management plan (e.g., multiple COC's addressed in a scheduled priority fashion, multiple areas covered by the plan with a single area chosen for initial study, or all areas simultaneously [area wide]). Any prioritization included in the management plan must be consistent with the requirements in section XII of the General Order, Time Schedule for Compliance.	p. 50
18	Provide a description of actions to be taken in order to achieve compliance with the receiving water limitations of the General Order (section III).	p. 57
19	Provide a description of how the Coalition plans to educate Members about the sources of the water quality exceedances in order to promote prevention, protection, and remediation efforts that can maintain and improve water quality.	p. 61
20	Provide a description of how the Coalition will identify, validate, and implement management practices to reduce loading of COCs to surface water or groundwater, as applicable, thereby improving water quality.	p. 53
21	Identification of key individuals involved in major aspects of the project (e.g., project lead, data manager, sample collection lead, lead for stakeholder involvement, quality assurance manager).	p. 57
22	Provide a discussion of each individual's responsibilities.	p. 57
23	Provide an organizational chart with identified lines of authority.	p. 57
24	Identification of the entities or agencies that will be contacted to obtain data and assistance.	p. 60

25	Identification of management practices used to control sources of COCs from irrigated lands that are 1) technically feasible; 2) economically feasible; 3) proven to be effective at protecting water quality, and 4) will comply with sections III.A and B of the General Order. Practices that growers will implement must be discussed, along with an estimate of their effectiveness or any known limitations on the effectiveness of the chosen practice(s). Practices identified may include those that are required by local, state, or federal law. Where an identified constituent of concern is a pesticide that is subject to DPR's Groundwater Protection Program, the GQMP may refer to DPR's regulatory program for that pesticide and any requirements associated with the use of that pesticide provided that the requirement(s) are sufficient to meet water quality objectives.	p. 55
26	Identification of outreach that will be used to disseminate information to participating growers. This discussion shall include: the strategy for informing growers of the water quality problems that need to be addressed, method for disseminating information on relevant management practices to be implemented, and a description of how the effectiveness of the outreach efforts will be evaluated. The third-party may conduct outreach efforts or work with the assistance of the County Agricultural Commissioners, U.C. Cooperative Extension, Natural Resources Conservation Service, Resource Conservation District, California Department of Food and Agriculture, or other appropriate groups or agencies.	p. 61
27	Provide a specific schedule and milestones for the implementation of management practices and tasks outlined in the management plan. Items to be included in the schedule include: time estimated to identify new management practices as necessary to meet the Order's surface and groundwater receiving water limitations (section III of the Order); a timetable for implementation of identified management practices (e.g., at least 25% of growers identified must implement management practices by year 1; at least 50% by year 2).	p. 63
28	Establish measureable performance goals that are aligned with the elements of the management plan strategy. Performance goals include specific targets that identify the expected progress towards meeting a desired outcome.	p. 63
Monitoring Methods		
29	The monitoring system must be designed to measure effectiveness at achieving the goals and objectives of the GQMP and capable of determining whether management practice changes made in response to the management plan are effective and can comply with the terms of the General Order.	p. 70
30	The third-party's Management Practice Evaluation Program and Groundwater Quality Trend Monitoring shall be evaluated to determine whether additional monitoring is needed in conjunction with the proposed management strategy(ies) to evaluate the effectiveness of the strategy(ies). This may include commodity-based representative monitoring that is conducted to determine the effectiveness of management practices implemented under the GQMP. Refer to section IV of the MRP for groundwater monitoring requirements.	p. 70
Data Evaluation		

31	Methods to be utilized to perform data analysis (graphical, statistics, modeling, index computation, or some combination thereof).	p. 71
32	Identify the information necessary to quantify program effectiveness going forward, including the tracking of management practice implementation. The approach for determining the effectiveness of the management practices implemented must be described. Acceptable approaches include field studies of management practices at representative sites and modeling or assessment to associate the degree of management practice implementation to changes in water quality. The process for tracking implementation of management practices must also be described. The process must include a description of how the information will be collected from growers, the type of information being collected, how the information will be verified, and how the information will be reported.	p. 71
Notes: p. = page		